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EXAMINER

D AGOSTA, STEPHEN M

ART UNIT

PAPER NUMBER

2683

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5

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/998,921

**Applicant(s)**

JOHANSSON, STAFFAN

**Examiner**

Stephen M. D'Agosta

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-6,10,11,13-16,20,21,23-26 and 30 is/are rejected.
- 7) ☒ Claim(s) 2,7-9,12,17-19,22 and 27-29 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Priority*

Applicant's claim for domestic priority under 35 U.S.C. 119(e) to applications 60/250,474 and 60/250,475 is acknowledged.

### *Information Disclosure Statement*

The information disclosure statement (IDS) submitted on 7-12-02 is in compliance and accordingly, the information disclosure statement is being considered by the examiner.

### *Drawings*

The drawings were received on 12-3-01 and have been reviewed by the draftsperson and examiner.

### *Specification*

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract **not exceed 150 words in length** since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this **invention**," "The disclosure describes," etc.

1. The abstract is too long – over 150 words
2. The word "invention" should be removed.

### ***Claim Objections***

Claims 1, 3, 16, 20, 26 and 30 objected to because of the following informalities:

a. Claim 1 uses the term "For use" which is unclear since it does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. Please reword – Failure to correct will lead to a USC 112 rejection. The examiner interprets the claim as a method used in a CDMA network.

b. Claim 3 recites "the filter" but no filter has been described in claim 1. The claim should state "a filter". Please correct - Failure to correct will lead to a USC 112 rejection.

c. Should Claim 16 depend from claim 11? (it is written as being dependent upon claim 1). Appropriate correction is required.

d. Claims 20 and 30 – the term "L1" should be re-written to reduce confusion as to what exactly this represents (eg. "mobile-to-source Leg" - see specification page 10, L6-13 describing L1). Appropriate correction is required.

e. Claim 26 – this independent claim does not recite the feature of establishing the search window on a statistically-ascertained time position based on time positions of other mobiles previously handed-over. The examiner believes this to be an essential feature of the patent application – as put forth by the applicant in their specification – and should therefore be included in each independent claim. Failure to correct will lead to a USC 112 rejection.

f. Should Claim 30 depend from claim 26? (it is written as being dependent upon claim 21). Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Claims 1, 3-6, 10-11, 13-16, 20-21, 23-26 and 30** rejected under 35 U.S.C.

102(e) as being anticipated by Raith US 6,711,408 (hereafter Raith).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

As per **claim 1**, Raith teaches a method used in a CDMA network (C5, L63 to C6, L8) having a source BTS and a destination BTS where a specified mobile station establishes a connection with the source BTS (C1, L27-35 teaches handoff between two cells/BTS's and figure 1 shows a mobile can connect to different BTS's #12), comprising:

Initiating a handover of the connection involving the specified mobile to the destination BTS (C1, L27-35 and C2, L19-43 teaches “currently serving BTS” and “target BTS”); and

Establishing a start position of a synchronization search window for the specified mobile at a statistically-ascertained time position based on time positions at which other mobiles previously initiated handover from the source BTS to the destination BTS (abstract and C4, L13-29 teaches recognizing a predefined route from previously stored calls and making handoff decisions based on this said stored information – the examiner notes that CDMA systems inherently use search windows to perform handoffs (see Schorman WO9923847 or Padovani US 5,577,022 in applicant's IDS, but not cited) and one skilled would use the stored historical information to start the search

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process earlier/later than normal based on the stored BTS information that the user is moving towards an area that will require a handoff).

As per **claim 3**, Raith teaches claim 1 further comprising maintaining a filter which calculates the filter output of the average time position  $T_{new}$  for the specified mobile at a RNC node of the CDMA system (C11, L61 to C12, L44, specifically C12, L23-27 teaches determining/filtering a set of points which yields an "average" based on the density and reads on the claim).

As per **claim 4**, Raith teaches claim 1 further comprising:

Determining the statistically-ascertained time position at a RNC; and

Communicating the statistically-ascertained time position from the RNC to the destination BTS (figures 4-6 show the process whereby the roaming mobile is handed off from the current BTS to the destination BTS – see figure 5, #306 and/or figure 6, steps 406-430. This inherently requires MSC/BSC control to transfer the channel from the current BTS to destination BTS and requires control data to flow to the destination BTS and reads on the claim).

As per **claim 5**, Raith teaches claim 4 further comprising maintaining at the RNC node a table which, for each of the plural scenarios of source BTS's and destination BTS's, stores a corresponding scenario-specific statistically-ascertained time position (figure 3 shows a map depicting user routes superimposed over cell coverage, hence Raith's system will store historical hand-offs based on the route traveled and thus reads on maintaining a table for each scenario of source/destination handoffs – ie. a user traveling along route #50 will handoff from cell #3 to cell #4 while users traveling along route #65 will handoff from cell #10 to cell #16).

As per **claim 6**, Raith teaches claim 1 wherein if the specified mobile is not found at the start time position, the method further comprises attempting to find a transmission of the specified mobile by looking at a search window position which neighbors the start time position (as previously stated, CDMA systems inherently use search windows to perform handoffs and one skilled would use the stored historical information to start the search process. The examiner notes that the predicted handoff based on the historical information may not always be optimal for every cell and therefore certain mobile users may not be "found at the start time position" whereby one skilled in the art would attempt to locate it by looking at a search window position which neighbors the start time position).

As per **claim 10**, Raith teaches claim 1 further comprising synchronizing the destination BTS with a transmission from the specified mobile using the search window to detect a transmission of the specified mobile station received at the destination BTS (figures 4-6 show the process whereby the roaming mobile is handed off from the current BTS to the destination BTS – see figure 5, #306 and/or figure 6, steps 406-430. This inherently requires MSC/BSC control to transfer the channel from the current BTS

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to destination BTS, thus synchronizing the destination BTS with the mobile's transmission using the search window to detect a transmission of the specified mobile station received at the destination BTS and reads on the claim).

As per **claim 11**, Raith teaches a CDMA system (C5, L63 to C6, L8) comprising:

A source BTS and a destination BTS having a synchronization searcher (C1, L27-35 teaches handoff between two cells/BTS's and figure 1 shows a mobile can connect to different BTS's #12 while C1, L27-35 and C2, L19-43 teaches "currently serving BTS" and "target BTS");

A time position estimator which establishes a start position of a synchronization search window for the searcher of the destination BTS, the synchronization search window being used to detect a transmission of a specified mobile received at the destination BTS during handover of a connection involving the specified mobile from a source BTS to the destination BTS, the time position estimator establishing the start position of the synchronization search window as a statistically-ascertained time position based on time position at which other mobile stations previously initiated handover from the source BTS to the destination BTS (abstract and C4, L13-29 teaches recognizing a predefined route from previously stored calls and making handoff decisions based on this said stored information – the examiner notes that CDMA systems inherently use search windows to perform handoffs (see Schorman WO9923847 or Padovani US 5,577,022 in applicant's IDS, but not cited) and one skilled would use the stored historical information to start the search process earlier/later than normal based on the stored BTS information that the user is moving towards an area that will require a handoff. The examiner further notes that the "time positioner" is disclosed by Raith since he teaches storing of information as to when a hand-off should begin and hence reads on the logic that will time-position when the search should occur based on said stored data from previous calls).

As per **claim 13**, Raith teaches claim 11 wherein the time position estimator resides at the RNC node of the CDMA system (figures 4-6 teach handoff operations which inherently requires MSC/BSC control and thus one skilled would locate the additional time position estimator at said MSC/BSC and not burden the phone with this hardware).

As per **claim 14**, Raith teaches claim 13 wherein the RNC node communicates the start time to the destination BTS (figures 4-6 show the process whereby the roaming mobile is handed off from the current BTS to the destination BTS – see figure 5, #306 and/or figure 6, steps 406-430. This inherently requires MSC/BSC control to transfer the channel from the current BTS to destination BTS and requires control data to flow to the destination BTS and reads on the claim).

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As per **claim 15**, Raith teaches claim 11 wherein the time position estimator maintains a table which, for each of the plural scenarios of source BTS's and destination BTS's, stores a corresponding scenario-specific start time position (figure 3 shows a map depicting user routes superimposed over cell coverage, hence Raith's system will store historical hand-offs based on the route traveled and thus reads on maintaining a table for each scenario of source/destination handoffs – ie. a user traveling along route #50 will handoff from cell #3 to cell #4 while users traveling along route #65 will handoff from cell #10 to cell #16).

As per **claim 16**, Raith teaches claim 1 (11?) wherein if the specified mobile is not found at the start time position, the method further comprises attempting to find a transmission of the specified mobile by looking at a search window position which neighbors the start time position (as previously stated, CDMA systems inherently use search windows to perform handoffs and one skilled would use the stored historical information to start the search process. The examiner notes that the predicted handoff based on the historical information may not always be optimal for every cell and therefore certain mobile users may not be “found at the start time position” whereby one skilled in the art would attempt to locate it by looking at a search window position which neighbors the start time position).

As per **claim 20**, Raith teaches claim 11 wherein the destination BTS starts mobile-to-source BTS synchronization when the searcher sees a predetermined transmission from the specified mobile (figures 4-6 show the process whereby the roaming mobile is handed off from the current BTS to the destination BTS – see figure 5, #306 and/or figure 6, steps 406-430. This inherently requires MSC/BSC control to transfer the channel from the current BTS to destination BTS and requires control data to flow to the destination BTS and reads on the claim. Since Raith teaches storing historical hand-off information from previous calls, Raith inherently discloses knowing when the network – eg. MSC/BSC and source/destination BTS's will need to begin synchronization for the destination BTS as the mobile approaches).

As per **claim 21**, Raith teaches a time position estimator at a CDMA node (C5, L63 to C6, L8) comprising:

The time position serving to establish a start position of a synchronization search window for a synchronization searcher of the destination BTS, the synchronization search window being used to detect a transmission of a specified mobile received at the destination BTS during handover of a connection involving the specified mobile from a source BTS to the destination BTS, the time position estimator establishing the start position of the synchronization search window as a statistically-ascertained time position based on time position at which other mobile stations previously initiated handover from the source BTS to the destination BTS (abstract and C4, L13-29 teaches recognizing a predefined route from previously stored calls and making handoff decisions based on this said stored information – the examiner notes that CDMA systems inherently use search windows to perform handoffs (see Schorman



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WO9923847 or Padovani US 5,577,022 in applicant's IDS, but not cited) and one skilled would use the stored historical information to start the search process earlier/later later than normal based on the stored BTS information that the user is moving towards an area that will require a handoff. The examiner further notes that the "time positioner" is disclosed by Raith since he teaches storing of information as to when a hand-off should begin and hence reads on the logic that will time-position when the search should occur based on said stored data from previous calls).

As per **claim 23**, Raith teaches claim 21 wherein the time position estimator resides at the RNC node of the CDMA system (figures 4-6 teach handoff operations which inherently requires MSC/BSC control and thus one skilled would locate the additional time position estimator at said MSC/BSC and not burden the phone with this hardware).

As per **claim 24**, Raith teaches claim 23 wherein the RNC node communicates the start time to the destination BTS (figures 4-6 show the process whereby the roaming mobile is handed off from the current BTS to the destination BTS – see figure 5, #306 and/or figure 6, steps 406-430. This inherently requires MSC/BSC control to transfer the channel from the current BTS to destination BTS and requires control data to flow to the destination BTS and reads on the claim).

As per **claim 25**, Raith teaches claim 21 wherein the time position estimator maintains a table which, for each of the plural scenarios of source BTS's and destination BTS's, stores a corresponding scenario-specific start time position (figure 3 shows a map depicting user routes superimposed over cell coverage, hence Raith's system will store historical hand-offs based on the route traveled and thus reads on maintaining a table for each scenario of source/destination handoffs – ie. a user traveling along route #50 will handoff from cell #3 to cell #4 while users traveling along route #65 will handoff from cell #10 to cell #16).

As per **claim 26**, Raith teaches claim a synchronization searcher for a destination BTS of a CDMA system (C5, L63 to C6, L8), the synchronization searcher using a synchronization search window to detect a transmission of a mobile during a handover of a connection involving the mobile to the destination BTS (C1, L27-35 teaches handoff between two cells/BTS's and figure 1 shows a mobile can connect to different BTS's #12 while C1, L27-35 and C2, L19-43 teach "currently serving BTS" and "target BTS"), there being a start position of the synchronization search window, and wherein if the specified mobile is not found at the start time position, the synchronization searcher attempts to find the transmission of the mobile by looking at the search window which neighbors the start time position (abstract and C4, L13-29 teaches recognizing a predefined route from previously stored calls and making handoff decisions based on this said stored information – the examiner notes that CDMA systems inherently use search windows to perform handoffs (see Schorman WO9923847 or Padovani US 5,577,022 in applicant's IDS, but not cited) and one skilled

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would use the stored historical information to start the search process earlier/later later than normal based on the stored BTS information that the user is moving towards an area that will require a handoff. Lastly, the examiner notes that the predicted handoff based on the historical information may not always be optimal for every cell and therefore certain mobile users may not be "found at the start time position" whereby one skilled in the art would attempt to locate it by looking at a search window position which neighbors the start time position).

As per **claim 30**, Raith teaches claim 21 (26?) wherein the destination BTS starts mobile-to-source BTS synchronization upon seeing a predetermined transmission from the specified mobile (figures 4-6 show the process whereby the roaming mobile is handed off from the current BTS to the destination BTS – see figure 5, #306 and/or figure 6, steps 406-430. This inherently requires MSC/BSC control to transfer the channel from the current BTS to destination BTS and requires control data to flow to the destination BTS and reads on the claim. Since Raith teaches storing historical hand-off information from previous calls, Raith inherently discloses knowing when the network – eg. MSC/BSC and source/destination BTS's will need to begin synchronization for the destination BTS as the mobile approaches. ).

### ***Allowable Subject Matter***

**Claims 2, 7-9, 12, 17-19, 22 and 27-29** objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

1. Rudrapatna et al. US 6,052,598
2. Wang US 5,649,290
3. Bi et al. US 6,163,696
4. Marlevi et al. US 5,572,221

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. D'Agosta whose telephone number is 703-306-5426. The examiner can normally be reached on M-F, 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Trost can be reached on 703-308-5318. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Stephen D'Agosta

